



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/644,549

08/19/2003

Lynn T. Antonelli

84454

6608

23523

7590

04/06/2006

NAVAL UNDERSEA WARFARE CENTER

DIVISION NEWPORT

1176 HOWELL STREET, CODE 000C

BLDG 112T

NEWPORT, RI 02841

EXAMINER

DOAN, JENNIFER

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/644,549

Applicant(s)

ANTONELLI ET AL.

Examiner

Jennifer Doan

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's communication filed on January 13, 2006, has been carefully studied by the Examiner. The arguments advanced therein are persuasive. The examiner agrees that Mead only disclose a single fiber encased in the resin and the resin is not a cured optical grade epoxy resin. In view of further search, however, a relevant document is found; therefore, a new rejection is set forth below. This action is **not** made final.

#### ***Specification***

1. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 4-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blyler, Jr. et al. (U.S. Patent 5,166,993) in view of Blyler, Jr. et al. (U.S. Patent 4,913,508) and further in view of Maas et al. (U.S. Patent 5,224,189).

With respect to claims 1, 2, 4, 9, 11 and 14, Blyler, Jr. et al. ('993) (figure 2) disclose an optical fiber coupler for connecting a first fiber optic element to a second fiber optic element, the coupler comprising a first fiber optic element (204) extending in a first direction whereby to position a free end of the first fiber optic element in a selected zone (203); a second fiber optic element (201) extending into the selected zone (203) from a direction generally opposite to the first direction to position a free end of the second fiber optic element in the selected zone (203) and proximate the first fiber optic element free end; and the single fiber optic strand extends through the apex and into the body; wherein the second fiber optic element comprises a plurality of fiber optic body through the base strands extending into the end; and wherein the plurality of fiber optic strands is arranged in a ring-like pattern (see figure 2); wherein the first fiber optic

element comprises a single fiber optic strand (204) and the second fiber optic element comprises a plurality of fiber optic strands (201).

Blyler, Jr. et al. ('993) disclose the zone (203) is filled with a high refractive index material (see the abstract), which means that it is an optical grade material.

Blyler, Jr. et al. ('993) do not explicitly disclose a cured epoxy resin. However, Blyler, Jr. et al. ('508) teach a cured epoxy resin (column 2, lines 30-31 and column 3, lines 35-38). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Blyler, Jr. et al. ('993) with filler as a cured epoxy resin (accordance with the teaching of Blyler, Jr. et al. ('508)) for the purpose of providing a permanent physical and optical connection between the fiber optic elements.

Neither Blyler, Jr. et al. ('993) nor Blyler, Jr. et al. ('508) disclose the body is provided with a cone-shaped end. However, Maas et al. (figure 1) teach the connector body (20) is provided with a cone-shaped end (column 2, lines 27-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device structure of the above combination by forming the connector body with a cone-shaped end (accordance with the teaching of Maas et al.) for the purpose of beneficially obtaining strain relief and a better protection for optical connector.

With respect to claims 11 and 14, Blyler, Jr. et al. ('993) do not disclose the first fiber optic element including a single fiber optic strand having a jacket surrounding a

Art Unit: 2874

central region; wherein a length of the jacket covering the central region of the first fiber optic strand is removed to expose the central region of the first fiber optic strand.

However, Blyler, Jr. et al. ('508) teach the first fiber optic element including a single fiber optic strand having a jacket surrounding a central region; wherein a length of the jacket covering the central region of the first fiber optic strand is removed to expose the central region (see column 4, line 66 - column 5, line 7 and column 5, line 57 - column 6, line 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Blyler, Jr. et al. ('993) to include the above features (accordance with the teaching of Blyler, Jr. et al. ('508)) for the purpose of providing a good protection for the optical fiber connectors.

With respect to claim 5, Blyler, Jr. et al. (figure 2) disclose the coupler, wherein the second fiber optic element (201) comprises a plurality of fiber optic strands extending into the body through the base end (see figure 2).

With respect to claim 6, Blyler, Jr. et al. (figure 2) disclose the coupler, wherein the first and second fiber optic elements (204, 201) comprise at least one fiber optic strand and at least another fiber optic strand respectively.

With respect to claims 7 and 12, Blyler, Jr. et al. (figure 2) disclose the coupler, wherein the free end of each of the at least one fiber optic strand of the first fiber optic

Art Unit: 2874

element (204) and the free of the at least another fiber optic strand of element (201) are butt-end terminated (see figure 2).

With respect to claims 8 and 13, Blyler, Jr. et al. (figure 2) disclose the coupler, wherein at least one of the first and second fiber optic elements (204, 201) comprises a plurality of fiber optic strands, the positions to which the free ends of the first and second elements extend being spaced apart by a distance (see figure 2) allowing a sufficient extent of diffusion of light in the optical grade epoxy resin (12) there between to couple light between each strand of one of the first and second fiber optic elements with each strand of the other of the elements (see the abstract).

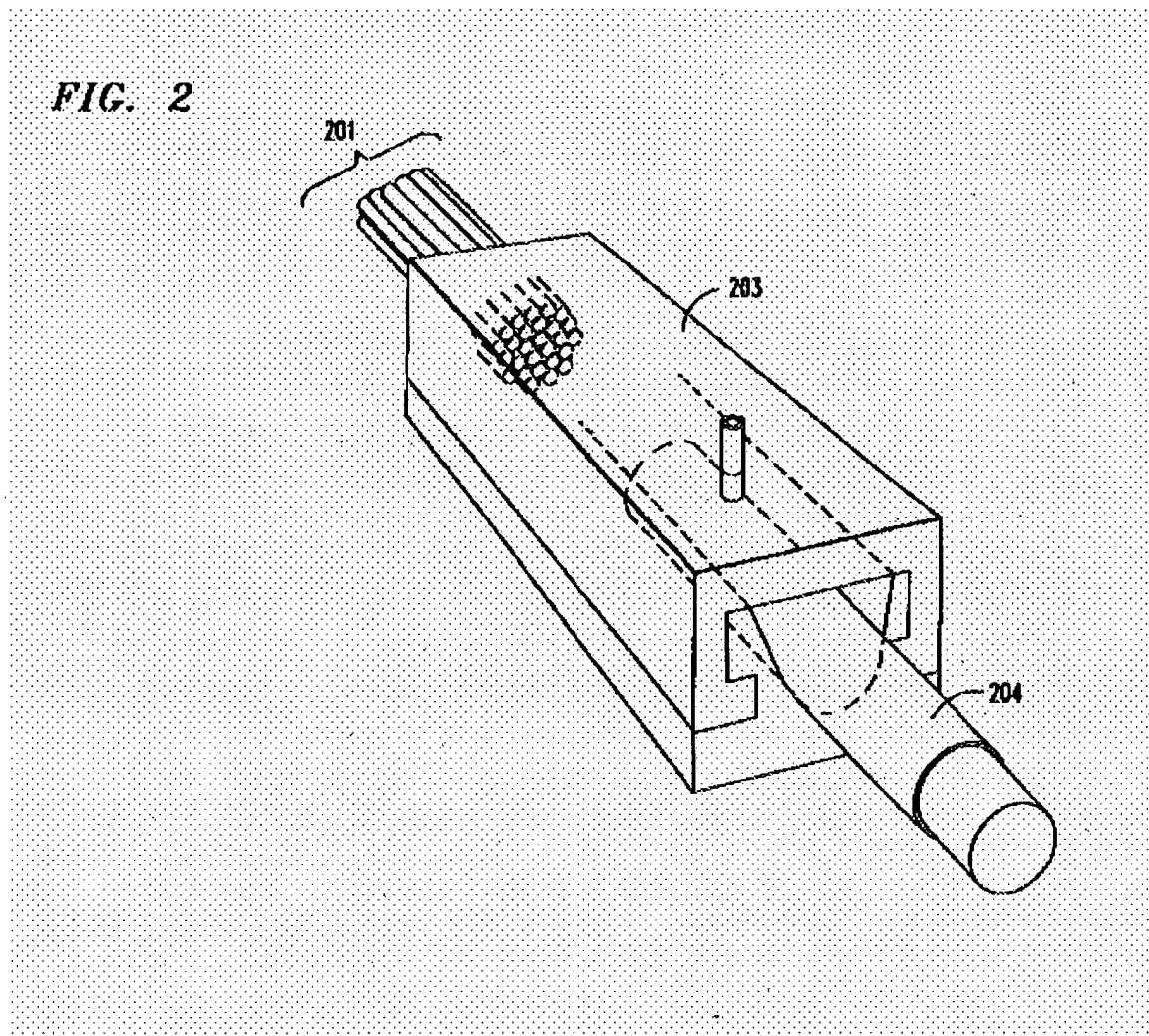


Figure 2 of Blyler, Jr. et al. ('993)



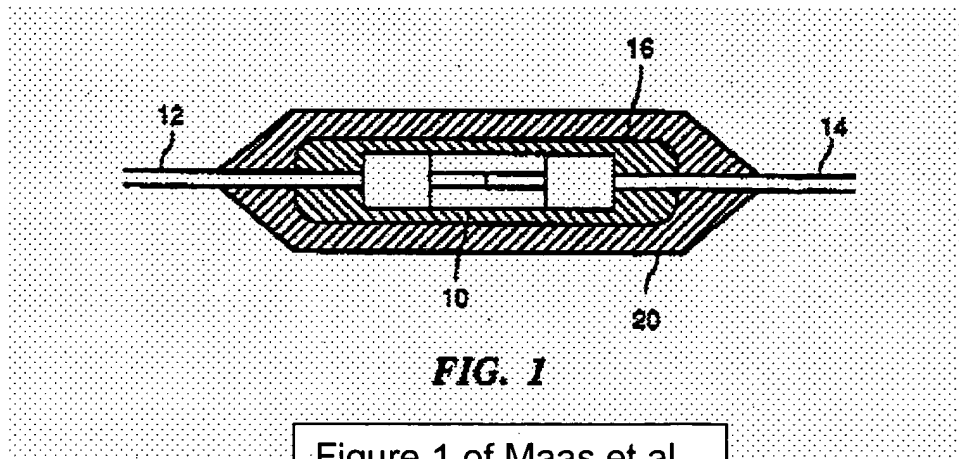


Figure 1 of Maas et al.

***Allowable Subject Matter***

5. Claim 10 is allowed.

Please see the allowable subject matter of claim 10 in the previous office action.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1, 2 and 4-14 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-

Art Unit: 2874

2346. The examiner can normally be reached on Monday to Thursday from 6:00 am to 3:30 pm, second Friday off.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JD

March 28, 2006



JENNIFER DOAN  
PRIMARY EXAMINER